

Attachment 18

Minimum Essential Requirements

5/1/2014

This document presents the minimum Essential requirements. The Offerors shall meet or exceed all requirements selected below; failure to meet the minimum essential requirements will result in an unacceptable rating.

Rugged Base Performance Requirements MHUS 2014

All Manufactured Homes

1.0. Compliance With 24 CFR 3280				
1.1.	24 CFR 3280 (a.k.a. “HUD Code”)	All units <i>shall</i> (1) be built to HUD Code as defined in 24 CFR 3280 & 3282. All units <i>shall</i> (2) bear the HUD label prior to shipment, and <i>shall</i> (3) meet any solicitation-specific HUD defined ratings for Wind Zone, Thermal Zone, and Roof Load.		
2.0. Compliance With International Building Code (IBC)				
2.1	International Building Code (IBC)	Each unit <i>shall</i> (4) include full house wrap meeting the standards set forth in the 2009 <i>International Building Code, Section 1403.2 Weather Protection</i> .		
3.0. Compliance With Uniform Federal Accessibility Standards (UFAS)				
3.1.	Uniform Federal Accessibility Standards (UFAS)	All units designated as “UFAS” or “Accessible” <i>shall</i> (5) be fully compliant with applicable UFAS requirements and this document. UFAS “reminders” included throughout these requirements are used to highlight certain standards, but are not all-inclusive, and the contractor <i>shall</i> (6) be responsible for ensuring full compliance with applicable UFAS requirements.		
4.0. Zoning Requirements				
4.4	“FEMA Units” (all) Manufactured Housing Design Criteria <i>shall</i> (13) be in Accordance with 24 CFR 3280.305(c) Structural design requirements - Wind, snow and roof loads for Wind Zone III.			
4.5	“FEMA Units” (all) Manufactured Housing Design Criteria <i>shall</i> (14) be in Accordance with 24 CFR 3280.305(c) Structural design requirements – roof load Northern Zone			
Zone Requirements Table				
		FEMA Northern	FEMA Southern	Continental(C ONUS) USA unit
Thermal Zone U/O		U/O Zone III	U/O Zone II	U/O Zone all
Wind Zone		Zone III	Zone III	Zone III
Roof Load		Northern Zone	Northern Zone	Northern Zone
5.0. Size and Configurations				
	3-Bedroom	2-Bedroom	Std. 1 Bedroom - Unit	Express (1 Bedroom) -Unit

Rugged Base Performance Requirements MHUS 2014

All Manufactured Homes

5.1.	Exterior Length	Final dimensions <i>shall (15)</i> be proposed by manufacturer, but not to exceed sixty feet(60’)(box length)	Final dimensions <i>shall (16)</i> be proposed by manufacturer	Final dimensions <i>shall (17)</i> be proposed by manufacturer	Final dimensions <i>shall (18)</i> be proposed by manufacturer, but not less than forty four (44) feet and not to exceed forty eight(48’) feet (Box length)
5.2.	Exterior Width	Final Dimensions <i>shall (19)</i> not exceed fourteen feet (14’) (box width)	Final dimensions <i>shall (20)</i> be proposed by manufacturer, but not to exceed fourteen feet (14’)(box width)	Final dimensions <i>shall (21)</i> be proposed by manufacturer, but not to exceed fourteen feet (14’)(box width)	*Final dimensions <i>shall (22)</i> be proposed by manufacturer, but not be less than eight (8’) and not to exceed eight feet and one half (8.5’) (transport width) Slide out portions of the MHU are not acceptable
5.3.	Area	Acceptable manufactured home size (Area) for the 3-Bedroom units <i>shall (23)</i> be a maximum of eight-hundred forty square feet (840 sq. ft.)	Acceptable manufactured home size (Area) for the 2-Bedroom units <i>shall (24)</i> be a maximum of seven-hundred forty square feet (740 sq. ft.)	Acceptable – manufactured home size for the 1- Bedroom units <i>shall (25)</i> be a maximum of five-hundred seventy-five square feet (575 sq. ft.)	Acceptable manufactured home size (area) for the express unit <i>shall (26)</i> be between a minimum of three hundred and fifty two square feet (352 sq. ft.) and a maximum of four hundred and eight square feet (408 sq. ft.)(Refer to 5.4)
6.0. Living Room					
6.1.	Furnishing	Each unit <i>shall (27)</i> have a designated, usable living room area.			
7.0. Kitchen/ Dining Room					

Rugged Base Performance Requirements MHUS 2014
All Manufactured Homes

7.1.	Furnishing	Each unit <i>shall (43)</i> have a designated safe and usable kitchen/dining room area.
7.6.	Laundry Area Washer and Dryer Hook-up	All Manufactured Homes <i>shall (99)</i> have a laundry area designated for the washer and dryer including the plumbing, electrical connections, and dryer vent. The washer / dryer area <i>shall (100)</i> be designed to accommodate a standard size side by side washer/dryer (i.e., 27" wide, 36" high and comes out from the wall 29 inches).
8.0. Bedrooms		

Rugged Base Performance Requirements MHUS 2014

All Manufactured Homes

8.1.	Furnishing	<p>All units <i>shall</i> (105) provide sleeping capacity to accommodate two persons in each bedroom.</p> <p>On the floor plan the bedrooms <i>shall</i> (106) be designated as follows:</p> <ul style="list-style-type: none"> • Master bedroom – Bedroom 1 • Second bedroom – Bedroom 2 • Third bedroom – Bedroom 3 <p>Bedrooms <i>shall</i> (107) be designated by size with the smallest bedroom being designated with the highest number</p> <p>Each bedroom <i>shall</i> (108) be furnished with the following:</p> <ul style="list-style-type: none"> • Bed(s) for two persons (including mattress, box spring and metal bed frame) defined as one of the following: <ul style="list-style-type: none"> ○ Master Bedroom – One standard full size bed (54" x 75"); ○ Second Bedroom – One standard full size bed (54" x 75"); ○ Third Bedroom – Two XL twin size mattresses (each 39" x 80") placed on a free standing bunk bed frame, and not built into the manufactured housing unit • One five-drawer dresser (minimum 48" H x 33" W x 18" D) • One nightstand or equivalent <p>In Bedrooms 1 and 2:</p> <ul style="list-style-type: none"> • One of the short sides of the bed <i>shall</i> (109) be designated as the head of the bed, and that short side <i>shall</i> (110) be placed against a wall • Of the three remaining sides, two <i>shall</i> (111) have a minimum of twelve inches (12") between the bed and the nearest wall • The final side of the bed <i>shall</i> (112) have open access of at least twenty-four inches (24") from the nearest wall <p>In Bedroom 3:</p> <ul style="list-style-type: none"> • One of the short sides of the bed <i>shall</i> (113) be designated as the head of the bed and that short side <i>shall</i> (114) be placed against a wall • One long side <i>shall</i> (115) be placed against a wall located perpendicular to the wall where the head of the bed is located • There <i>shall</i> (116) be a minimum of twelve inches (12") between the non-head, short edge of the bed and the nearest wall • The final long side of the bunk bed <i>shall</i> (117) be open to the room
9.0. Bathroom		
9.1	Full Bathroom (Non-UFAS)	<p>The contractor <i>shall</i> (125) design and install a full bathroom in all non-UFAS units that meet the following requirements (From 9.1 to 9.1.6) and be only accessible from the common area and not from an individual bedroom.</p>

Rugged Base Performance Requirements MHUS 2014

All Manufactured Homes

9.2	Additional Three-Quarters (¾) Bathroom <i>Three(3) bedroom units only</i>	The ¾ bathroom <i>shall (145)</i> include all items listed in the full bathroom numbers 9.1.2 through 9.1.6 The ¾ bathroom <i>shall (146)</i> not have item numbers 9.1.1 (Shower and Tub). Instead, the contractor <i>shall (147)</i> install a shower. The shower <i>shall (148)</i> have a minimum base of 36” x 36” (threshold). The base of the shower <i>shall (149)</i> be rectangular or squared in shape, and be commercially available (no custom made items). *In a UFAS three(3) bedroom unit, only the full bath is required to meet UFAS requirements				
10.0. Unit Hallways						
10.1.	Hallway Width	All hallways <i>shall (150)</i> be a minimum of thirty-six inches (36”) wide.				
11.0. Electrical						
11.1	Electrical System	Electrical systems <i>shall (152)</i> be in compliance with the <i>National Electrical Code, 24 CFR 3280</i> and be able to supply sufficient and adequate Power to the whole MHU without having breakers tripped and/or fire hazard. The unit electrical service <i>shall (155)</i> consist of a 120 / 240 volts 4-wire panel board, complete with master and branch circuit breakers. The acceptable amperage <i>shall (160)</i> be as defined below				
			3-bedroom	2-bedroom	One Bedroom	Express Unit 1 Bedroom
		Electrical System – AMPS	200 A	150 A (minimum)	150A(minimum)	100 A (minimum)
		Electrical System – Volts	120 / 240 V	120 / 240 V	120/240V	120 / 240 V
11.2	Water Heater Specific Requirements	The contractor <i>shall (161)</i> place the water heater on an individual circuit				
12.0. Plumbing						

Rugged Base Performance Requirements MHUS 2014

All Manufactured Homes

12.2.	Drainage System	<p>All fixtures <i>shall</i> (195) be provided with an adequate drainage system, each fixture connecting to a main sewer line. The main sewer line which <i>shall</i> (196) run below the floor and above the bottom board to the place of exit in the rear of the axles</p> <p>The drainage system <i>shall</i> (192) meet HUD code</p>
12.3.	Water Heater / Furnace Compartment	The manufactured home manufacturer <i>shall</i> (206) provide interior access to the water heater. The interior access door <i>shall</i> (207) be appropriately sized and located as to allow easy replacement of the water heater.
12.5.	Plumbing Controls and Faucet Assemblies	All faucet assemblies in the home <i>shall</i> (225) include secondary shutoff valves (one for each the hot and cold water supply). A secondary shutoff valve is not required for the tub/shower assembly. The secondary shutoff <i>shall</i> (226) be located in close proximity to the faucet assembly (i.e., under the sink).
13.0. Attic		
13.1.	Radiant Barrier	The manufacturer <i>shall</i> (227) install a reflective insulation system in the attic with either a radiant barrier or reflective insulation product as a component. A radiant barrier is made of highly reflective material and may be reinforced with a middle fabric layer making it puncture and tear resistant.
14.0. Structural System		
14.1.	Transportation System and Main Frame	The manufacturer <i>shall</i> (225) provide documentation that the manufactured home complies with 24 CFR 3280.903.
14.10	Ceiling Height	The interior height of the ceiling <i>shall</i> (264) be eight feet (8'). The ceiling <i>shall</i> (265) have a nominal height between seven feet eleven inches (7' 11") and eight feet one inch (8' 1").
15.0. Transport and Transportation System		
15.5.	Brakes	<p>Appropriate number of axles <i>shall</i> (318) be equipped with electrically operated brakes to meet 49 CFR Section 393.42. The brakes <i>shall</i> (319) meet or exceed the brake performance requirements of FMCSA 49 CFR Section 393.52, in combination with the towing vehicle.</p> <p>For the Express 1-Bedroom units, the brake system <i>shall</i> (320) have the capability of meeting the performance requirements of FMCSA 49 CFR 393.43(d) when equipped with a battery. An appropriate battery box and</p>

Rugged Base Performance Requirements MHUS 2014

All Manufactured Homes

15.7.	Tires and Rims	<p>All tires and rims <i>shall</i> (324) be new and free of defects. The Contractor <i>shall</i> (325) specify the tires and rims to meet or exceed the minimum US DOT requirements of FMVSS 571.110 for trailers of 10,000 lbs or less or 571.120 for trailers more than 10,000 lbs. Rim clamps, bolts, nuts or other related tire-mounting hardware <i>shall</i> (326) be new.</p> <p>All rims <i>shall</i> be the same color</p>
15.10	Transportation Lighting	<p>1-Bedroom Express units <i>shall</i> (335) be equipped with permanent lighting per USDOT NHTSA FMVSS 571.108. Please refer to USDOT NHTSA FMVSS 571.108. (Federal Lighting Equipment Location Requirements can be found at: http://www.nhtsa.gov/cars/rules/standards/conspicuity/trlrpstr.html)</p> <p>2 and 3-Bedroom units <i>shall</i> (336) be transported with lighting compliant with FMCSA 49 CFR Section 393.17.</p>
16.0. Exterior Covering		
17.0. Interior Covering		
18.0. Heating/Air Conditioning/Ventilation		
18.1	HVAC Systems	<p>FEMA HVAC systems <i>shall</i> (385) be one of the following:</p> <p>Central Air Conditioner/Split System</p> <p>The installation of a central air condition unit requires duct work and pipe work.</p> <p>Packaged Unit</p> <p>Unlike the split system, the packaged unit has all the components of the air conditioning system all in one place. The unit itself requires duct work, power line and drain piping.</p> <p>Mini Split / Ductless Split</p> <p>The split systems have an exterior condenser and an indoor evaporator unit that houses the cooling coil, a fan, controls to which you can add indoor blowers. Some models are designed to have more than one evaporators connected to the condenser unit. Each evaporator blower is mounted high on a wall inside the unit/room you want to cool.</p> <p>HVAC systems <i>shall</i> (386) not transmit mechanical energy, potential and kinetic energy(i.e. Vibration), to the chassis of the MH that would lead to generate sounds and/or vibrations that will affect the comfort of the occupants</p> <p>The Contractor can utilize different methods to absorb and/or dissipate the effects of the mechanical energy</p>

Rugged Base Performance Requirements MHUS 2014

All Manufactured Homes

18.3.	Furnace	<p>The unit <i>shall</i> (391) be equipped with at least a ninety-five percent (95%) efficient electric furnace (central heating system) capable of maintaining an average of seventy degrees Fahrenheit (70°F) temperature in the manufactured home. The furnace <i>shall</i> (392) be able to maintain the temperature based on the coldest average temperature of the operating area of the manufactured home.</p> <p>The electric furnace (central heating system) <i>shall</i> (393) operate according to 24 CFR 3280.510. The furnace <i>shall</i> (394) also be built or equipped for the installation of a split type air conditioner and have enclosed space in water heater/furnace compartment ,for an A-coil evaporator unit, and with a 4-wire thermostat connects connections completely wired and installed.</p> <p>Each furnace <i>shall</i> (395) have instructions attached to the furnace. The furnace <i>shall</i> (396) be complete with a factory-supplied base suitable for a forced air duct distribution system.</p> <p>The HVAC (furnace and air conditioning) unit can be a packaged unit or split units as long as the HVAC including the air conditioning condenser does not cause vibration within the manufactured home (See air condition installation requirements.)</p> <p>If the HVAC system has a separate furnace / air conditioning condenser, the furnace / air handling unit <i>shall</i> (397) be enclosed in the water heater / furnace compartment.</p> <p>This FEMA requirement may need the contractor to request an Alternative Construction letter from HUD; the vendor <i>may</i> work with HUD and follow their process to obtain an Alternative Construction Letter.</p> <p>Note: An approved ACL is required at the time of submission of proposal.</p>			
		3-Bedroom	2-Bedroom	1 Bedroom	Express 1-Bedroom
		<p>The output <i>shall</i> (398) not be less than forty-thousand (40,000) BTU and in accordance with <i>Subpart F of 24 CFR 3280 and Subpart H of 24 CFR 3280.</i></p>	<p>The contractor <i>shall</i> (399) specify the output for the 2-Bedroom units. The HVAC <i>shall</i> (400) be designed and built in accordance with <i>Subpart F of 24 CFR 3280 and Subpart H of 24 CFR 3280.</i></p>	<p>The contractor <i>shall</i> (401) specify the output for the 1-Bedroom units. The HVAC <i>shall</i> (402) be designed and built in accordance with <i>Subpart F of 24 CFR 3280 and Subpart H of 24 CFR 3280.</i></p>	<p>The contractor <i>shall</i> (403) specify the output for the express-Bedroom units. The HVAC <i>shall</i> (404) be designed and built in accordance with <i>Subpart F of 24 CFR 3280 and Subpart H of 24 CFR 3280.</i></p>

Rugged Base Performance Requirements MHUS 2014

All Manufactured Homes

18.7.	HVAC Installation	The HVAC system <i>shall</i> (416) be completely installed at the production facility. This includes duct work, installation manual, and any other materials needed for the installation. The HVAC <i>shall</i> (417) be provided with the manufactured home. The HVAC <i>shall</i> (418) be the type that is installed on the short side of the home. The HVAC unit <i>shall</i> (419) not require additional installation when the manufactured home is installed.
19.0. Fixtures and Receptacles		
20.0. Safety Equipment		
20.1.	Smoke Alarms	<p>Smoke alarms <i>shall</i> (464) be installed as specified in 24 CFR§ 3280.208 Smoke alarm requirements</p> <p>Each unit <i>shall</i> (465) have interconnected smoke alarms that utilize the electrical system of the home as the primary power source (with battery back-up included). Smoke alarms <i>shall</i> (466) follow NFPA recommendations without affecting compliance with the 24 CFR§ 3280.208 Smoke alarm requirements and/or the Rugged Based Requirements.</p> <p>Smoke alarms <i>shall</i> (467) be equipped with push-button testing and temporary silencing devices. Provide a smoke detector in each bedroom and in the living room / dining / kitchen area. Each smoke alarm <i>shall</i> (468) be equipped with a strobe component as visual signal of smoke or fire.</p>
22.0. Windows		
23.0. UFAS Requirements		
All units designated as “UFAS” or “Accessible” <i>shall</i> (520) be fully compliant with applicable UFAS regulations and this document. UFAS “reminders” included throughout these requirements are used to highlight certain standards, but are not all-inclusive, and the contractor <i>shall</i> (521) be responsible for ensuring compliance for applicable UFAS regulations. FEMA has provided specific areas where past units designs have been lacking; however contractors are responsible for UFAS products being fully compliant with applicable PARTS of UFAS regulations.		